Study Unit 1

- **Database Management System** - is a software package designed to store and manage databases.
- **Data Model** - is a collection of concepts for describing data.
- **Database** - A database is a data structure that stores organized information.
- **Entities** – Real-world object distinguishable from other objects.
- **Relationships** – exists between two relational database tables when one table has a foreign key that references the primary key of the other table.
- **Scalability** - Scalability is a characteristic of a system, model or function that describes its capability to cope and perform under an increased or expanding workload.
- **Concurrency** - Is the ability of a database to allow multiple users to affect multiple transactions.
- **Abstraction** - This process of hiding irrelevant details from user.
- **Database Efficiency** - The property that the database uses a (mostly) small amount of computational and storage resources.
- **Edgar Codd** - Invented the relational model for database management, the theoretical basis for relational databases and relational database management systems.
- Robustness
- **Data Integrity** - Consistent and accurate.
- **ISO** - International Organization for Standardization.
- **ERP** - Enterprise Resource Planning (ERP) systems are a collection of applications that help integrate and streamline a company's business processes.
- **Data Independence** - Data is separate from the programs that access it. Changes can be made to the data without necessitating a change in the programs and vice versa.
- **Semantic data model** - The first of a series of data models that more closely represented the real world, modelling both data and their relationships in a single structure known as an object.
- **Relation** - A relation is a data structure which consists of a heading and an unordered set of tuples which share the same type.
- **Schema** - is a description of a particular collection of data, using the a given data model.
- **Conceptual data model** - Are information gathered from business requirements. Entities and relationships modelled in such ERD are defined around the business's need.
- **Physical data model** - It represents the actual design blueprint of a relational database. It represents how data should be structured and related in a specific DBMS so it is important to consider the convention and restriction of the DBMS you use when you are designing a physical ERD.
- **External data model** - The application programmer's view of the data environment. Given its business focus, an external model works with a data subset of the global database schema.
- **Index** - A separate structure that allows fast access to a table's rows based on the data values of the columns used in the index.
- **Data View** - A data view is a view on a data table, a bit like a sql view. It allows you to filter and sort the rows - often for binding to a windows form control.
- **WAL** - Write-ahead logging (**WAL**) is a family of techniques for providing atomicity and durability (two of the ACID properties) in database systems.
- **Lock** - A method for safely protecting objects from being changed by two or more users (processesfithreads) at the same time.

- **Checkpointing** - A checkpoint writes the current in-memory modified pages (known as dirty pages) and transaction log information from memory to disk and, also, records information about the transaction log.
- **Log** - is a history of actions executed by a database management system.
- **DBA** – Database administrator, Person responsible for maintaining the database.
  - Designs logical fiphysical schemas
  - Handles security and authorization
  - Data availability, crash recovery
  - Database tuning as needs evolve
- **DDL** – Data Definition Language
  - Builds the data dictionary
  - Creates the database
  - Describes the subschema
  - Specifies record or field security constraints
- **DML** - Data Manipulation Language, Changes the content in the database:
  - Updates, insertions, and deletions